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Risk-Informed Supplier Management: Optimizing the Allocation of Limited Resources

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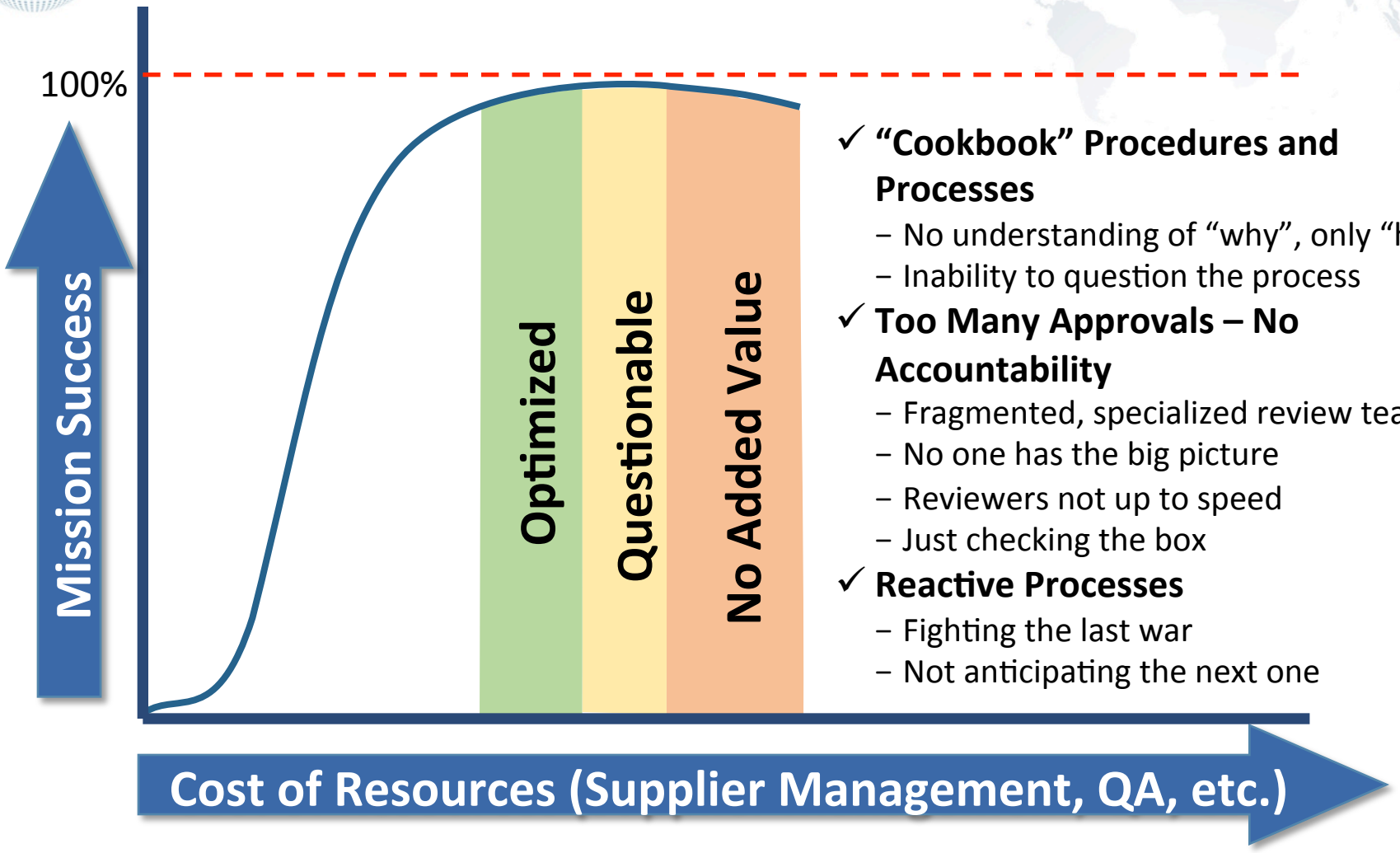
Transforming Challenge into Success

Industry Trends Complicating Supplier Management

- Lower Percentage of Value Added by Prime Contractor
  - "General Contractor" role of integrating components and assemblies from subcontractors
  - Greater reliance on supplier/subcontractor processes and QA
- Geographically Diverse Teams
- Services-Based Procurements
  - Use of "Commercial Practices"
  - Government Insight verses Oversight
- Fewer Resources Available for Supplier Management and Mission Assurance

Law of Diminishing (and Negative) Returns



- ✓ **"Cookbook" Procedures and Processes**
  - No understanding of "why", only "how"
  - Inability to question the process
- ✓ **Too Many Approvals – No Accountability**
  - Fragmented, specialized review team
  - No one has the big picture
  - Reviewers not up to speed
  - Just checking the box
- ✓ **Reactive Processes**
  - Fighting the last war
  - Not anticipating the next one

Value-Added Supplier Management Practices

- "Road show" to all suppliers early in project
  - Kickoff meeting
  - Ensure understanding of project requirements
  - Identify critical suppliers and "problem children"
- Risk assessment of project elements to determine supplier management resource requirements
- Early (and frequent) engagement with inexperienced or high-risk suppliers to assure all plans and procedures are in place
- Electronic tools to facilitate communication and performance tracking (Sharepoint, VTC, etc)
- One manager per supplier covers all using programs to assure information continuity

Identifying Supplier Management Risk Areas

- Experience/Past Performance
- Task Complexity
- Supplier Criticality
- Requirements Uncertainty (and Creep)
- Qualification Status/Changes to Proven Design
- Personnel/Ownership Changes
- Language/ITAR Barriers

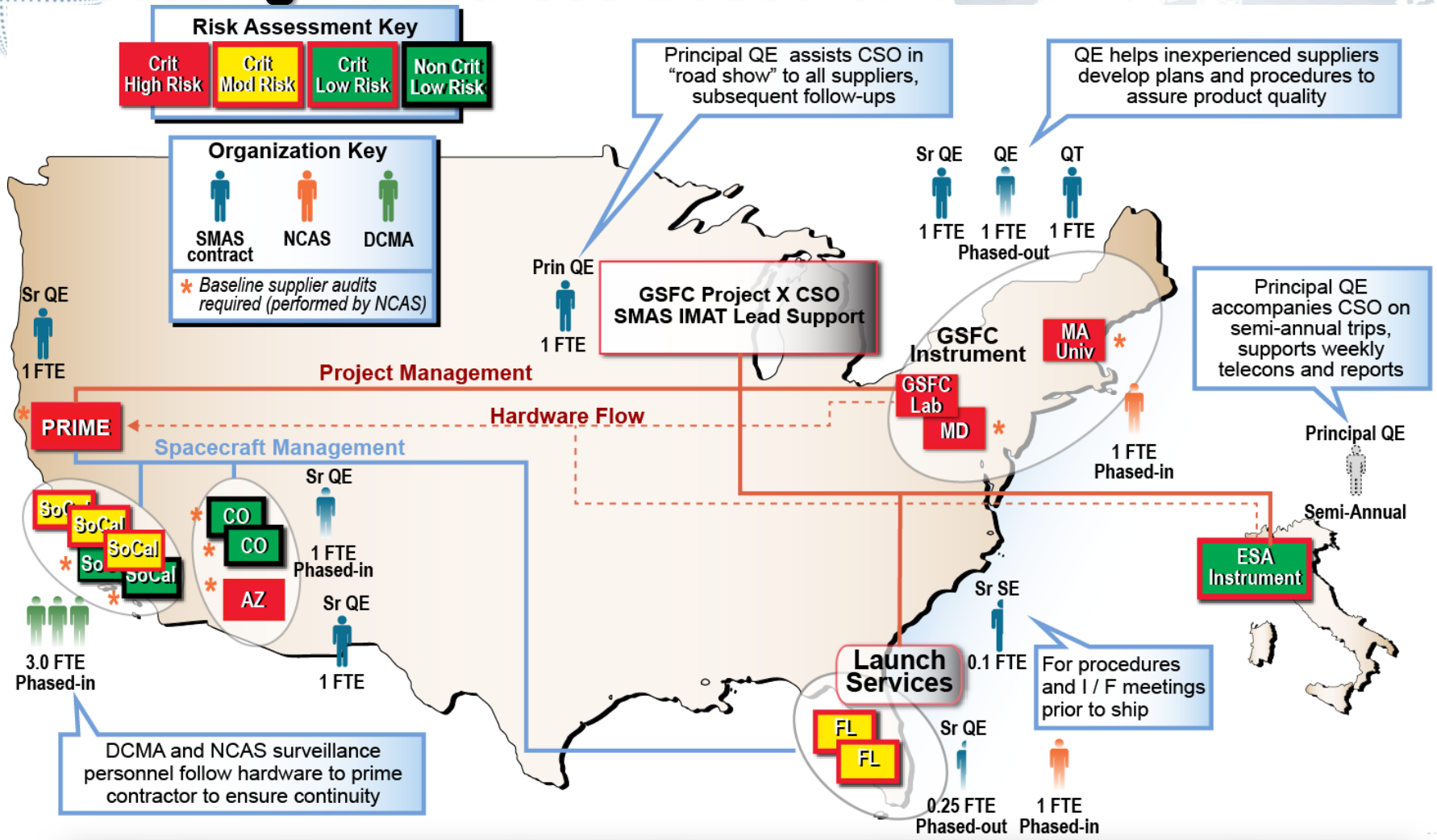
Evaluating Supplier Management Risk Levels

- Perform Likelihood/Consequence Evaluation
- Identify Potential Mitigation Actions
- Prioritize Mitigations Based on Resource Availability
- Implement Mitigations
- Evaluate Frequently
- Document Performance
- Communicate with Other Programs

Risk Assessment of Supplier Management Activities

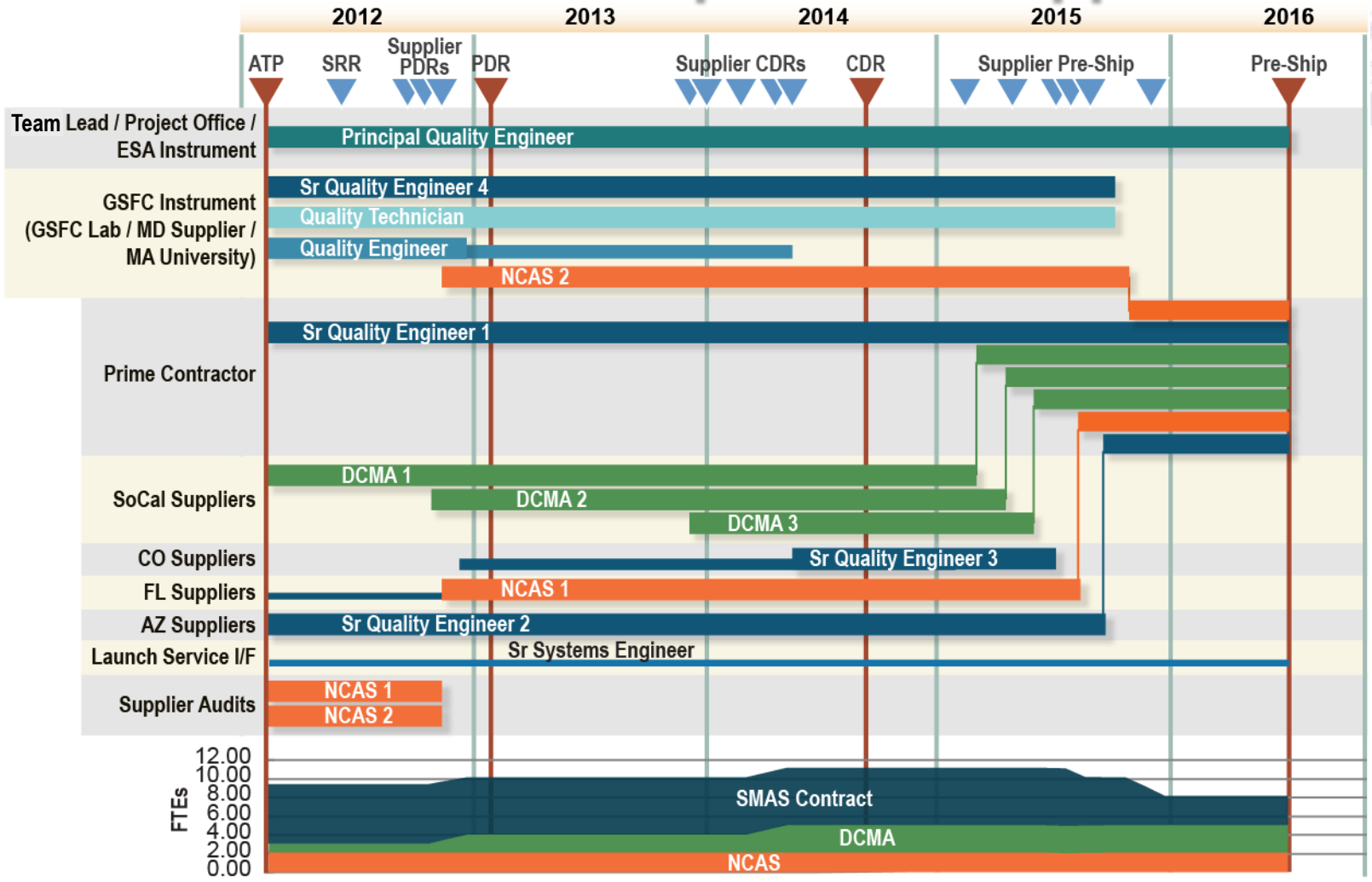
Risk ID	Description	Before Mitigation	Mitigation	After Mitigation
1	**Variability in Supplier Maturity** Given that significant cultural differences and process control capabilities exist among the mission suppliers, there is a possibility that integration and verification problems or latent defects will arise in later program phases, resulting in delays, increased project costs, and/or mission failure.	5x5	•Project Lead coordinate with CSO and travel to all suppliers within the first two months of start to convey project requirements and assess supplier experience and readiness and conduct supplier risk assessment and review of currently-available supplier audits. •Implement aggressive supply chain management program using NCAS for initial supplier audits. •Position additional resources at high-risk suppliers early in project life cycle to ensure mission assurance plans and infrastructure are in place early and all requirements are fully understood. •Focus on requirements verification and interface management.	2x5
2	**Requirements Identification and Flowdown** Given the rapid pace of this project, there is a possibility that not all mission requirements will be properly identified and flowed down into project and procurement activities resulting in cost and schedule impacts.	5x3	•Engage as soon as possible to define mission assurance requirements and ensure that requirements are incorporated in contracts as appropriate. •Review Subsystem specifications and requirements documents •Work with CSO to identify requirements and ensure Prime flows them to all suppliers. •Research past experience and lessons learned to identify and employ the appropriate requirement set for this mission.	3x3
3	**Communications Problems with International Supplier** Given that ITAR and/or Export Control barriers may limit the flow of information, there is a possibility that mission critical interface errors and/or project delays will arise.	5x3	•Secure TAA with supplier as early as possible after ATP. •Ensure requirements and interfaces are well defined. •Ensure mission assurance requirements are well defined. •Conduct semi-annual face-to-face meetings and weekly telecons with supplier. •Establish collaborative electronic tools for document review and approval.	1x3
4	**Heritage Subsystem Qualification Levels** Given that several spacecraft subsystems rely on a heritage design, there is a possibility that design inadequacies will not be identified until testing resulting in launch delay and increased cost.	4x3	•Thoroughly evaluate the pedigree and qualification status of all heritage hardware against project requirements through an early exchange of models, analyses, and testing reports. •Review and fully vet any decisions to reduce testing requirements for heritage hardware. •Plan and perform proper testing to Project operating environments where clear applicability of prior testing is not available.	2x3

Allocating Resources Based on Risk



Risk-Based Approach to Supplier Management Optimizes Resource Allocation

Risk Assessment Yields Optimized Support Plan



Risk-Informed Supplier Management Maximizes Mission Success with Available Resources

PROVEN PROCESSES & TRAINED PERSONNEL

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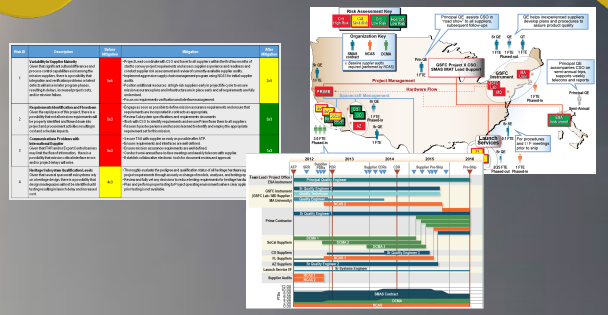
RISK-INFORMED RESOURCE ALLOCTION



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EFFECTIVE, EFFICIENT SUPPLIER MANAGMENT

- Optimized resource allocation
- Matched to supplier needs and criticality
- Phased to match project life cycle

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